

New England Pollinator Partnership: *Best Management Practices*

Overview: The New England Pollinator Partnership (NEPP) will increase pollinator habitat, reduce exposure of pesticides and pathogens to pollinators, and participating landowners will not be liable for killing, harming, or harassing pollinators (see list of species below) that are listed or may be listed under the Endangered Species Act (ESA). Under this agreement the Natural Resources Conservation Service (NRCS) provides financial and technical assistance to farmers and forest landowners to improve pollinator habitat for bumble bees and the monarch butterfly. This agreement affects all New England States (Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, and Connecticut).

Best Management Practices: To ensure that pollinator conservation work carried out under this agreement benefits pollinators, participating landowners are required to follow best management practices (BMPs). The BMPs described below are a step-down approach to implementing the conservation measures listed in the U. S. Fish and Wildlife Service (USFWS) Biological Opinion/Conference Report. The BMPs help avoid and/or minimize adverse impacts to pollinators when implementing and maintaining conservation practices identified in a NRCS conservation plan.

ESA Predictability: The NRCS and the USFWS recognize landowners conducting routine farming and forestry activities may inadvertently kill, harm, or harass (*i.e.* “take”) bumblebees and the monarch butterfly. By adhering to the BMPs and implementing and maintaining the pollinator conservation practices as outlined in the NRCS conservation plan, farmers and forest landowners receive ESA predictability. ESA predictability is a form of liability protection to participating landowners. In other words, if a rusty patched bumble bee (or other species listed below) is harmed when following the BMPs and the NRCS conservation plan, the landowner is protected from the liability of “take” under the ESA. Additionally, the USFWS assures participating landowners will not be required to implement additional conservation measures if any of the species below become federally threatened or endangered. A Question and Answer fact sheet is attached to provide more clarification on the relationship of the BMPs and ESA predictability.

List of covered species that are currently listed (**bold**) under the ESA and those that would be covered if listed as threatened or endangered in the future (no bold):

- **Rusty patched bumble bee** (*Bombus affinis*) – Federally Endangered Species
- Yellow banded bumble bee (*Bombus terricola*) – Under a status review by USFWS, listing recommendation due in September, 2019
- Monarch butterfly (*Danaus plexippus* var. *plexippus*) - Under a status review by USFWS, listing recommendation due in December, 2020
- Ashton’s cuckoo bumblebee (*Bombus bohemicus*)
- American bumble bee (*Bombus pensylvanicus*)
- Yellow bumble bee (*Bombus fervidus*)
- Lemon cuckoo bumble bee (*Bombus citrinus*)
- Fernald cuckoo bumble bee (*Bombus flavidus*)
- Confusing bumble bee (*Bombus perplexus*)
- Indiscriminate cuckoo bumble bee (*Bombus insularis*)
- Variable cuckoo bumble bee (*Bombus variabilis*)

Conservation Plan: To implement NEPP, NRCS staff and conservation partners work together with landowners to develop a conservation plan. Conservation plans provide the site-specific roadmap for

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establishing or enhancing pollinator habitat while meeting landowner production goals and the plan (along with following BMPs) serves as the instrument of ESA predictability. Within conservation plans are conservation practices or enhancements that are tailored to each landowner's objectives.

BEST MANAGEMENT PRACTICES

Participating landowners must adhere to all applicable BMPs to receive ESA predictability. BMPs are described below for pesticides and other activity types.

Pesticide BMPs apply to all activities implemented under the NEPP agreement. The other BMPs apply to specific activities. The relevant NRCS conservation practices are listed under each activity type. NRCS participating landowners may need to follow BMPs under more than one activity type depending on planned conservation efforts.

General Statement on Planning and Siting Activities

All NRCS practices or enhancements that are used to establish or enhance pollinator habitat should identify an appropriate site on a farm or woodlot. Site selection can not only influence the success or failure of establishing pollinator habitat but also affect the likelihood of inadvertent harm to bumble bees and the monarch butterfly. When selecting sites, consider how and where pesticides are used. Pesticides (*i.e.* insecticides, fungicides, and herbicides) applied directly to pollinator habitat, indirectly to pollinator habitat by drift, or systemically (*e.g.* seed coatings) can be detrimental to pollinators and their habitat. Some pesticides persist in the soil and can build up after years of repeated use including clothianidin, imidacloprid, and thiamethoxam. To avoid impacts from potential sources of pesticides, locate pollinator habitat away from areas that are sprayed or establish no-spray buffers or windbreaks as specified in the following sections.

Protection from Pesticides

The following pesticide BMPs are designed to protect pollinators from pesticides when implementing and maintaining conservation practices in an NRCS conservation plan. These pesticide BMPs do not provide liability protection for all pesticide operations on a farm field. To receive liability protection from all pesticides on a farm field, a NRCS conservation plan must include the Integrated Pest Management (595) practice that's been specifically designed to protect pollinators from pesticide applications. The following pesticide buffer guidelines are adapted from Xerces' Bee Better Certification standards. If the participating lands are Bee Better Certified, consider all pesticide BMPs satisfied for as long as the lands remain Bee Better Certified.

Establish a pesticide-free buffer around major pollinator habitat areas. Buffers protect habitat from sprays occurring on participating lands and neighboring properties. If pesticides are not used on the property, and neighboring land does not pose a risk of pesticide drift, no buffers are needed. The term pesticide is inclusive, and includes fungicides, herbicides, insecticides, miticides, and all other pesticides. The use of herbicides to spot treat undesirable plants (*e.g.*, invasives) within the buffer or within the conservation practice footprint is acceptable.

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Adhere to the following pesticide buffers around the footprints of conservation practices that provide pollen and/or nectar forage for pollinators.

- i. **Spatial buffers should meet the following minimum widths.** *If buffers consist of unsprayed section of crops then buffer must be clearly delineated via a physical marker or GPS polygon.*
 - a. 10 feet for hand-applications (e.g., backpack or handheld sprayer)
 - b. 40 feet for ground-based applications, except airblast.
 - c. 60 feet for airblast applications.
 - d. 125 feet for seed treated with nitroguanidine neonicotinoids.
- ii. **Spatial buffer distances above can be halved if buffer distance includes a vegetative pesticide drift barrier (windbreak/shelterbelt) that is above the spray release height. Drift barriers should be:**
 - a. comprised of small-needled evergreen species
 - b. planted at a 60% density to allow airflow through buffer
- iii. **Herbicides (except paraquat dichloride) may be applied within buffers or within footprint if needed to control non-native invasive plants.**
 - a. Take necessary precautions to ensure that herbicides do not drift into pollinator habitat and kill the plants within it.

Activity Type 1 – Establishing perennial flowering plants from seed or container grown transplants¹

Conservation plans may involve the establishment of pollinator habitat from seed or container grown transplants. Container grown transplants include plant plugs, bare-root seedlings, container grown, or balled stock. These BMPs refer to the different methods used to establish plantings.

BMPs for Activity Type 1:

- Follow the pesticide buffer guidelines above to locate pollinator habitat away from areas that are frequently sprayed.
- If milkweed plants are present, perform a rapid assessment to detect monarch eggs and larvae prior to site preparation activities. If monarch eggs or larvae are observed, delay site preparation activities.
- If active bumble bee colonies are found within the plot, select site preparation strategies and time activities to avoid disturbing nests. Work with NRCS State and/or Pollinator Partner Biologist to determine best site preparation strategies and appropriate timing.
- Ensure plant materials are non-invasive, preferably native to the area, and seed is clean and free of noxious weeds.

NRCS conservation practices that establish perennial flowering plants from seed or transplants:

Environmental Quality Incentive Program (EQIP) Practices	
Conservation Cover (327)	Filter Strip (393)
Hedgerow Planting (422)	Contour Buffer Strips (332)
Field Border (386)	Upland Wildlife Habitat Management (645)

¹ All Conservation Stewardship Program (CSP) enhancements (except for E595116X and E595116Z) under the WLFW effort should follow Activity Type 1 BMPs.

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Wildlife Habitat Planting (420)	Riparian Forest Buffer (391)
Tree/Shrub Establishment (612)	Stream Habitat Improvement and Management (395)
Riparian Forest Buffer (391)	Restoration of Rare or Declining Natural Communities (643)
Forage and Biomass Planting (512)	Mulching (484)

Activity Type 2: mowing, brush hogging, cutting vegetation, grazing, applying herbicide, and associated soil disturbance.

BMPs for Activity Type 2:

- If milkweed plants are present, perform a rapid assessment to detect monarch eggs and larvae prior to site preparation activities. If monarch eggs or larvae are observed, delay activities until fall, or cut around patches of milkweed.
- When mowing, haying, or brush hogging in a practice footprint, cut as high as possible, ideally 6-8 inches or even greater unless a lower cutting height is justified for site preparation and maintenance work.
- Mow at reduced speeds, ideally < 8 mph
- If herbicides are needed, use spot spraying techniques rather than a blanket application.
- All scheduled mowing, burning, brush hogging, or cutting of herbaceous habitat (non-forested) should be done after the first hard frost (~November) or before spring green up (~April). Note that timing will vary with latitude.
- Vegetation removal in the practice footprint should be done on a rotational basis to achieve a long-term goal structurally diverse patch mosaic.
- Prescribed grazing plans must allow flowering plants to bloom.
- Obstruction Removal (500) must occur between October and April.

NRCS conservation practices that enhance pollinator habitat by mowing, brush hogging, cutting vegetation, and by applying herbicide:

EQIP Practices	
Early Successional Habitat Development/Mngmt (647)	Obstruction Removal (500)
Brush Management (314)	Tree/Shrub Site Preparation (490)
Forest Stand Improvement (666)	Access Road (560)
Herbaceous Weed Treatment (315)	Forest Trails and Landings (655)
Wetland Enhancement (659)	Tree/Shrub Pruning (660)
Wetland Restoration (657)	Residue and Tillage Mngmt (329)
Prescribed Grazing (528)	

Activity Type 3: Improving pollinator habitat using flowering cover crops or by altering the spatial arrangement and phenology of forage using conservation crop rotations.

Cover crops and crop rotations can improve soil health, prevent erosion, and help suppress weeds. Additionally, cover crops and crop rotations that are planned to increase the quality and seasonal availability of pollinator forage can support a healthier pollinator community. When planning these activities adhere to the following BMPs.

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- Allow cover crops to flower at least 20 days or until senescence, whichever comes first.
- Mow down cover crops or harvest flowering crops at reduced speeds (< 8 m.p.h.).
- Do not apply insecticides or fungicides on cover crops, or during flowering on flowering crops meant to supply pollinator forage as part of a conservation crop rotation.
- Consider planting single species cover crops (i.e. buckwheat) in succession to extend bloom.
- When possible, plan flowering so that bloom occurs during times of the year identified as bloom gaps in conservation plan (see Partner Biologist Trip Report, WHEG, or Pollinator Habitat CAP).
- Consider allowing cover crops remain as winter cover, postponing cultivation activities until the following spring when nest disturbance would be less impactful.

The NRCS conservation practice that establishes pollinator habitat with cover crops:

EQIP Practice
Cover Crop (340)
Conservation Crop Rotation (328)

Activity Type 4: Protecting pollinator habitat with a windbreak

When pesticides are applied on cash crops windbreaks can be used to prevent pesticide drift. The following BMPs for this activity type consider using windbreaks to catch and prevent pesticide drift.

- Only plant evergreens such as spruce, juniper, fir and arborvitae. Avoid planting pine.
- Avoid overly dense (> 60% density) windbreaks. Dense windbreaks create a wall effect that carries pesticides to the ground on the leeward side of the windbreak (aka: downwash).
- When planting, spacing should be 12-20 feet guided by the mature width of plants.

The NRCS conservation practice that establishes windbreaks:

EQIP Practice
Windbreak/Shelterbelt Establishment (380)

By signing here, I agree to participate in the New England Pollinator Partnership (NEPP) and follow these Best Management Practices as they apply to the NEPP Conservation Practices in my Conservation Plan.

Signature of Participating Landowner

Date